Small Business Innovation Research/Small Business Tech Transfer

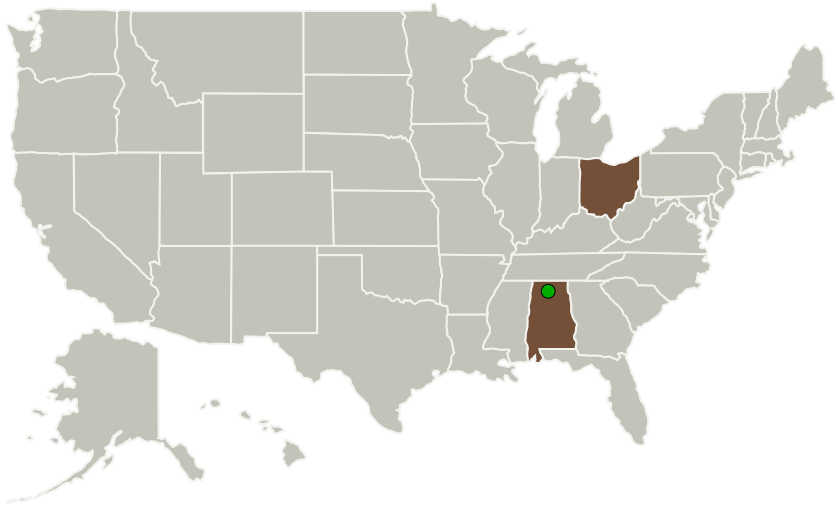
Radiation/Temperature Hardened Advanced Readout Array with Dynamic Power Modes, Phase I

Completed Technology Project (2014 - 2014)

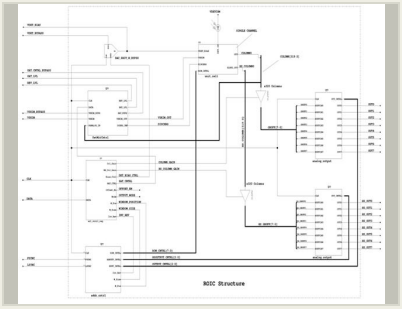
Project Introduction

NASA has an interest in the development of advanced instruments and components for Lunar and planetary science missions. Instrumentation is needed for the exploration of inner and outer planets and their moons, comets, asteroids, etc. As a consequence, instrumentation systems must withstand the extreme environments experienced in space and planetary environments; radiation, temperature, pressure, launch/landing stresses, etc. Specific areas related to instrument deployment for in situ sensors and sensor systems on a variety of space platforms including orbiters, flyby spacecraft, landers, rovers, balloon, other aerial vehicles, sub-surface penetrators, and impactors. The envisioned Phase I program will develop an innovative digital readout integrated circuit architecture that will increase resolution and provide improved sensitivity. The low power design will incorporate provisions that mitigate effects of radiation and extreme temperatures.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
RNET Technologies, Inc.	Lead Organization	Industry	Dayton, Ohio
Marshall Space Flight Center(MSFC)	Supporting Organization	NASA Center	Huntsville, Alabama



Radiation/Temperature Hardened Advanced Readout Array with Dynamic Power Modes Project Image

Table of Contents

Radiation/Temperature Hardened Advanced Readout Array with Dynamic Power Modes, Phase I

Completed Technology Project (2014 - 2014)

Primary U.S. Work Locations	
Alabama	Ohio

Project Transitions

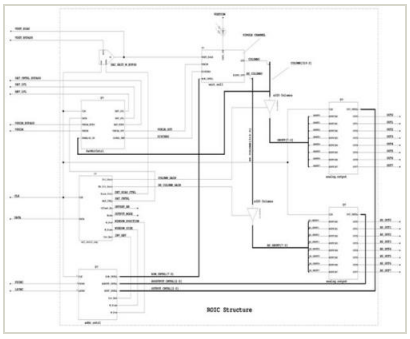
June 2014: Project Start

December 2014: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/137597)*

Images



Project Image
Radiation/Temperature Hardened Advanced Readout Array with Dynamic Power Modes Project Image
(https://techport.nasa.gov/image/131155)

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
RNET Technologies, Inc.

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

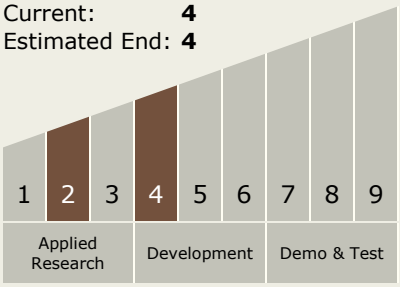
Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Todd S Grimes

Technology Maturity (TRL)

Start: **2**
Current: **4**
Estimated End: **4**



Radiation/Temperature Hardened Advanced Readout Array with Dynamic Power Modes, Phase I

Completed Technology Project (2014 - 2014)

Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.1 Detectors and Focal Planes

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System